[10191/1227]

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

Applicants	:	Ulrich BENZLER et al.
Serial No.	:	09/462,863
Filed	:	May 8, 2000
For	:	METHOD FOR GENERATING AN IMPROVED IMAGE SIGNAL WHEN ESTIMATING THE MOTION OF IMAGE SEQUENCES, IN PARTICULAR A PREDICTION SIGNAL FOR VIDEO IMAGES USING MOTION-COMPENSATING PREDICTION
Examiner	:	Shawn S. AN
Art Unit	:	2613
Conf. No.	:	5597

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P. O. Box 1450
Alexandria, VA   22313-1450

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Appeal Brief-Patents, Commissioner for Patents, P. O. Box 1450, Alexandria, VA   22313-1450 on

Date: ___11/30___, 2004   Reg. No. 36,197
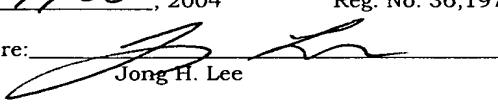
Signature:_____
               Jong H. Lee

APPELLANTS' REPLY BRIEF IN RESPONSE TO EXAMINER'S ANSWER (UNDER 37 C.F.R. § 1.193)

S I R :

In response to the Examiner's Answer mailed on December 3, 2003 regarding the above-identified application, Applicants submit the following arguments in support of the appeal of the final rejection.

ARGUMENT

The following issues are presented for review on appeal in this case: a) whether the subject matter of claims 6-10 and 12 is rendered obvious under 35 U.S.C. § 103(a) by "Hierarchical Motion Estimation Using The Phase Correlation Method In 140 Mbit/s HDTV-Coding" by Manfred Ziegler ("the Ziegler reference") in view of United States Patent No. 4,880,160 to Thomas ("the Thomas reference"); and b) whether the subject matter of claim 11 is rendered obvious under 35 U.S.C. § 103(a) by the Ziegler reference and the Thomas reference in view of United States Patent No. 5,991,447 to Eifrig et al. ("the Eifrig reference").

Regarding the rejection of claims 6-10 and 12, the Examiner contends in the Examiner's Answer that "Thomas reference indeed teaches motion vector detecting method comprising aliasing reducing interpolation filtering, and **more than four neighboring pixels** (cubic spline fit) being utilized for an interpolation of each pixel . . . . (col. 9, lines 25-55). The Examiner considers the cubic spline fit as having eight neighboring pixels, which clearly meets the limitation of **more than four neighboring pixels**." (Examiner's Answer, p. 5). However, Applicants respectfully submit that the Examiner's contentions are unsupported by the actual teachings of the Thomas reference and the general knowledge available in the art.

The interpolation algorithm disclosed by the Thomas reference specifically teaches **"taking a weighted sum of the values of the four nearest pixels,"** where "[t]he weights were chosen such that when the point being interpolated coincided with the location of either of the four pixels, the interpolated value was equal to the value of that pixel." (Thomas, col. 9, ll. 44-48, *emphasis added*). Furthermore, the Thomas reference also indicates that "[l]ater investigations improved on this algorithm by using a two dimensional cubic spline fit." (Col. 9, l. 48-50). While the Examiner summarily concludes that "the Examiner considers the cubic spline fit as **having eight neighboring pixels**," this

assertion is not only unsupported by the Thomas reference, but clearly contradicted by the well-known definition of "cubic spline fit." As examples, Applicants cite two separate documents found on the World Wide Web: a) "the cubic spline method fits cubic polynomials to **between consecutive data points**" (http://mxp.physics.umn.edu/s98/projects/menz/analysis.htm); and b) "cubic spline interpolation ... fits a ... cubic polynomial between each pair of data points" (http://www.mathworks.com/access/helpdesk/help/toolbox/curvefit/ch_fit14.shtml). Accordingly, the well-known definition of "cubic spline fit" clearly contradicts the Examiner's assertion that "the cubic spline fit [utilizes] **eight neighboring pixels**." Thus, while the Thomas reference explicitly teaches **using four nearest pixels**, the Thomas reference clearly does not teach using **more than four neighboring pixels** for an interpolation of each pixel, as recited in Claim 6.

Regarding the Appellants' argument that the Ziegler reference teaches away from the subject matter of claim 6, i.e., that Ziegler directly teaches away from using the techniques of a nonlinear interpolation system, the Examiner contends the following:

> Even though ZIEGLER states that it is better to use a method other than the non-linear interpolation, the Examiner considers the ZIEGLER'S statement to be nothing more **than a design choice**. The ZIEGLER'S statement does not teach away from the subject matter just because ZIEGLER prefer the other method. The ZIEGLER'S statement is **merely an opinion**. (Examiner's Answer, p. 6).

Applicants respectfully submit that the Examiner's assertions amount to nothing more than selective reading of the Ziegler reference, i.e., the Examiner is simply asserting that teachings of Ziegler adverse to the Examiner's arguments are not relevant. However, such selective reading of a prior art reference is clearly contrary to the established law: a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. See W.L. Gore & Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540 (Fed. Cir. 1983), cert.

<u>denied</u>, 469 U.S. 851 (1984) (cited in MPEP 2141.03). Even if the Examiner were correct in asserting that the statements of Ziegler were merely an opinion and a design choice (with which conclusion Appellants disagree), this does not change the fact that the alleged "opinion" and "design choice" nevertheless discourage one of ordinary skill in the art from the subject matter of claim 6, i.e., that Ziegler directly teaches away from using the techniques of a nonlinear interpolation system.

For the foregoing reasons, the combination of the Ziegler reference and the Thomas reference does not render claim 6 or its dependent claims 7-10 and 12 obvious under 35 U.S.C. §103(a).

Regarding the Examiner's contention that Applicants are presenting "arguments against the references individually," and that "one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references." (Examiner's Answer, p. 6, citing *In re Keller*, 642 F.2d 413, 208 U.S.P.Q. 871 (C.C.P.A. 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986)). Applicants note that this argument by the Examiner is not helpful in resolving the issue on appeal, since there is no reasonable way to discuss an obviousness rejection based on a combination of references except by discussing ***each and every one of the references***, which necessarily means that each reference has to be discussed individually before any discussion of the overall teachings of the combined references can be presented. Applicants note that the Examiner's obviousness rejection involved discussion of the individual applied references, which discussion is no different in form than the Applicants' discussion of the applied references.

CONCLUSION

For the foregoing reasons, it is respectfully submitted that the final rejections of claims 6-12 under § 103(a) should be reversed.

Respectfully submitted,

KENYON & KENYON

Dated: January 30, 2004
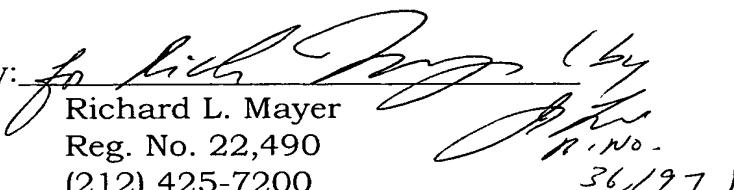
By: _____
Richard L. Mayer
Reg. No. 22,490
(212) 425-7200

CUSTOMER NO. 26646